

AMENDMENTS TO THE CLAIMS

1-7 (Canceled)

8. (Previously presented) A corrosion resistant steel comprising:

a mild steel substrate miscible with molten zinc; and

an adjacent iron-aluminum intermetallic alloy layer having a top surface and a bottom surface, said iron-aluminum intermetallic layer having a thickness of greater than 1 micron and less than 5 microns.

9. (Currently amended) The steel of claim 8 wherein said iron-aluminum intermetallic comprises at or between 18% and ~~56%~~ 49% aluminum by weight.

10. (Previously presented) The steel of claim 9 wherein said iron-aluminum intermetallic layer has a thickness greater than 2 microns and less than 5 microns.

11-13 (Canceled)

14. (Previously presented) The steel of claim 9 further comprising a zinc layer having a lower surface in contact with the top surface of said iron-aluminum intermetallic layer.

15. (Original) The steel of claim 14 wherein said zinc layer has a thickness of between 5 and 50 microns.

16. (Original) The steel of claim 15 wherein said zinc layer has a thickness of between 10 and 35 microns.

17. (Previously presented) The steel of claim 14 further comprising a phosphating agent crystalline layer in contact with an upper surface of said zinc layer.

18. (Original) The steel of claim 17 wherein said phosphating agent crystalline comprises hexafluoro-titanium phosphate.

19. (Previously presented) The steel of claim 17 further comprising an aluminum particulate filled cured epoxy overlayer adhering to said phosphating agent crystalline layer.

20. (Original) The steel of claim 9 wherein said iron-aluminum intermetallic layer is from 19 to 25 total weight percent aluminum.

21. (Original) The steel of claim 9 with the proviso that said iron-aluminum intermetallic layer is substantially devoid of rare earth metals.

22. (Original) The steel of claim 9 wherein said steel substrate is formed as a tube.

23-30 (Canceled)

31. (Previously presented) A corrosion resistant steel comprising:
a mild steel substrate miscible with molten zinc;
an adjacent iron-aluminum intermetallic alloy layer having a top surface and a bottom surface, said iron-aluminum intermetallic layer having a thickness of greater than 1 micron and less than 5 microns; and
a zinc layer having a lower surface in contact with the top surface of said iron-aluminum intermetallic layer.

32. (Currently amended) The steel of claim 31 wherein said iron-aluminum intermetallic comprises at or between 18% and ~~56%~~ 49% aluminum by weight.

33. (Previously presented) The steel of claim 32 wherein said iron-aluminum intermetallic layer has a thickness greater than 2 microns and less than 5 microns.

34. (Previously presented) The steel of claim 31 wherein said zinc layer has a thickness of between 5 and 50 microns.

35. (Previously presented) The steel of claim 31 wherein said zinc layer has a thickness of between 10 and 35 microns.

36. (Previously presented) The steel of claim 34 further comprising a phosphating agent crystalline layer in contact with an upper surface of said zinc layer.

37. (Previously presented) The steel of claim 36 wherein said phosphating agent crystalline comprises hexafluoro-titanium phosphate.

38. (Previously presented) The steel of claim 36 further comprising an aluminum particulate filled cured epoxy overlayer adhering to said phosphating agent crystalline layer.

39. (Previously presented) The steel of claim 32 wherein said iron-aluminum intermetallic layer is from 19 to 25 total weight percent aluminum.

40. (Previously presented) The steel of claim 32 with the proviso that said iron-aluminum intermetallic layer is substantially devoid of rare earth metals.

41. (Previously presented) The steel of claim 32 wherein said steel substrate is formed as a tube.